

### **REMARKS**

Claims 76-142 are pending. Claims 76-86, 90, 92-99, 103, 105-140 and 142 are under examination. Claims 121, 138 and 142 have been amended. New claims 143 and 144 have been added. Support for the amendments and new claims can be found throughout the specification and the claims as filed. In particular, support for the amendment to claims 121, 138 and 142 can be found, for example, in Figure 1 and on page 22, line 20, to page 23, line 14. Accordingly, these amendments and new claims do not raise an issue of new matter and entry thereof is respectfully requested. Entry of the proposed amendments is respectfully submitted to be proper because the amendments are believed to place the claims in condition for allowance.

### **Regarding the Change of Inventorship**

The change of inventorship submitted with the previous response has been indicated in the Office Action as being denied. In particular, the Office Action indicates that the Statement under 37 C.F.R. § 3.73(b) has been submitted on behalf of Applera Corporation but not on behalf of co-assignees the Institute for Systems Biology and the University of Washington. With respect to the Institute for Systems Biology, it is respectfully submitted that a Statement under § 3.73(b) has already been filed on behalf of the Institute for Systems Biology with the response to Notice to File Missing Parts on October 15, 2001. For the Examiner's convenience, a copy of the previously filed Statement on behalf of the Institute for Systems Biology is attached. With respect to the University of Washington, attached herewith is a Statement under 37 C.F.R. § 3.73(b) executed on behalf of assignee the University of Washington along with proof of signatory authority.

The Office Action also indicates that the request for change of inventorship has been denied because a Statement under 37 C.F.R. § 1.48(a)(5) has been filed by the Institute for Systems Biology but not by co-assignees the University of Washington and Applera. Under 37 C.F.R. § 1.48(a), amendment of inventorship requires under § 1.48(a)(5) as follows:

If an assignment has been executed by any of the original named inventors, the written consent of the assignee. (emphasis added)

The original named inventors, Rudolf H. Aebersold and Huilin Zhou, made the initial assignment to the Institute for Systems Biology. It is respectfully submitted that the previous

submission of the Statement under 37 C.F.R. § 1.48(a)(5) executed on behalf of the Institute for Systems Biology satisfies the requirement of providing “written consent of the assignee” of “the original named inventors.” Nevertheless, if the Examiner still requests that the other co-assignees provide Statements under 37 C.F.R. § 1.48(a)(5), Applicants will provide them.

**Rejections Under 35 U.S.C. § 112, Second Paragraph**

The rejection of claims 121-140 and 142 under 35 U.S.C. § 112, second paragraph, as allegedly indefinite is respectfully traversed. The Office Action indicates that the claims are indefinite for recitation of “Figure 1.” Applicants have amended claims 121, 138 and 142 to delete the term “Figure 1” and to incorporate the structure from Figure 1 into the claims, as suggested by the Examiner. Claims 121 and 142 have also been amended to refer to the “photocleavable functional group,” the “leucine tag,” and the “sulfhydryl reactive group” shown in the structure recited in the claims. The solid support in the structure has been labeled “1” and recited in the claims as “solid support (1),” as requested by the Examiner.

With respect to the assertion in the Office Action that the “isotope tag” recited in the claims does not appear in the structure of Figure 1, Applicants respectfully point to the teachings in the specification on page 18, lines 14-27, which indicate that an “isotope tag” refers to a chemical group which can be generated in two distinct isotopic forms, for example, heavy and light isotopic versions of the constituent elements making up the chemical group. The specification also exemplifies the use of differentially isotopically labeled leucine tags, one non-deuterated and the other deuterated (page 45, line 20, to page 46, line 2). Applicants respectfully submit that the recited “isotope tag” does appear in the structure recited in the claims. Furthermore, the claim has been amended to specifically recite the leucine isotope tag. Accordingly, Applicants respectfully submit that claims 121 and 142, and dependent claims 122-140, are clear and definite and respectfully request that this rejection be withdrawn.

The Office Action additionally indicates that claim 142 is unclear for the use of the term “compounds” instead of “compositions” as used in the other claims and that a composition does not conventionally include a “solid support.” Claim 142 has been amended to delete the term “compound” and instead recite “composition” as suggested by the Examiner. Applicants

respectfully submit that claim 142 is clear and definite and respectfully request that this rejection be withdrawn.

**Rejection Under 35 U.S.C. § 112, First Paragraph**

The rejection of claim 142 under 35 U.S.C. § 112, first paragraph, as allegedly lacking written description is respectfully traversed. The Office Action asserts that there is no support in the specification for the "pair of compounds" of claim 142. Applicants respectfully disagree with the assertion in the Office Action that the specification does not provide support for a "pair" of compounds or compositions, for the reasons of record and as discussed below. Nevertheless, claim 142 has been amended to delete the phrase "pair of compounds." Furthermore, Applicants respectfully submit that the specification provides sufficient description and guidance for the recited "two compositions." In particular, the specification teaches that heavy and light mass labels can be used to differentially label molecules and that mass labels suitable for differentially labeling two samples are chemically identical but differ in mass (page 13, line 22, to page 14, line 4; page 18, lines 14-27). Therefore the specification clearly teaches two compositions or a pair of compositions which are chemically identical but differ in mass. The specification further teaches that differentially labeled isotope tags are used if two different samples are to be used for comparative or quantitative analysis (page 22, line 20, to page 23, line 14). The specification also exemplifies the use of differentially isotopically labeled leucine tags, one non-deuterated and the other deuterated (page 45, line 20, to page 46, line 2). Accordingly, Applicants respectfully submit that the specification provides sufficient teaching and guidance for two compositions having the recited structure, as claimed. Therefore, Applicants respectfully request that this rejection be withdrawn.

The rejection of claims 76-86, 90, 92-99, 103, 105-120, 128-127 and 142 under 35 U.S.C. § 112, first paragraph, as allegedly lacking enablement is respectfully traversed. Applicants respectfully maintain that the specification provides sufficient description and guidance to enable the claimed compositions.

Applicants respectfully maintain that, based on the teachings in the specification and what was well known in the art, one skilled in the art would have been enabled to make and use the invention as claimed. The specification teaches a variety of "cleavable functional groups,"

for example, on page 15, line 11, to page 17, line 26. In particular, the specification teaches the use of photo-cleavable groups, chemical cleavable groups, cleavage of peptides using chemical or enzymatic cleavage, and cleavage of nucleic acid with an endonuclease. The specification additionally teaches a variety of tags, for example, on page 14, line 5, to page 15, line 10, including a mass tag such as an isotope tag, differentially isotopically labeled tags, charged amino acids, isotope distribution tags, and the like. The specification further teaches a variety of well known reactive groups, for example, on page 17, line 27, to page 18, line 13. With regard to the assertion in the Office Action that very different chemistries are involved depending on the functional groups, Applicants respectfully maintain that one skilled in the art would have readily understood appropriate chemistries for particular functional groups based on the teachings in the specification and what was well known to those skilled in the art. Accordingly, it is respectfully submitted that the specification provides sufficient description and guidance to enable the claimed compositions. Therefore, Applicants respectfully request that this rejection be withdrawn.

In light of the amendments and remarks herein, Applicants submit that the claims are now in condition for allowance and respectfully request a notice to this effect. The Examiner is invited to call the undersigned agent if there are any questions.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 502624 and please credit any excess fees to such deposit account.

Respectfully submitted,

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